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FOREST CONTROL

by

CONTINUOUS INVENTORY

"Today I have grown taller from walking
with the trees."

...Karle Wilson

Milwaukee, Wis. June, 1961 No. 87

FOREST VALUATION INVENTORIES ARE OVERDUE

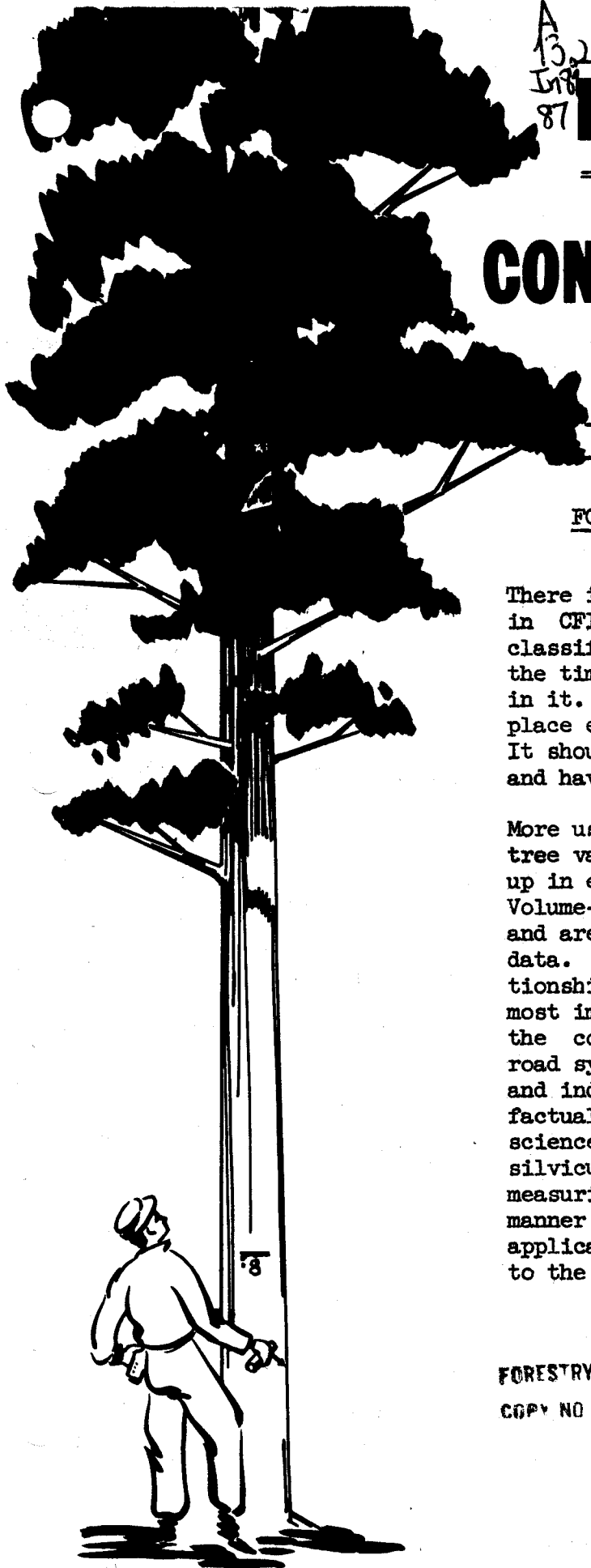
There is an undercurrent of opinion and belief in CFI circles, that the time has come to classify, code and punch every single tree for the timber products of highest value contained in it. This unit record of stumpage values in place every 5 years opens up attractive vistas. It should be of great interest to foresters, and have a sound prospective value in forestry.

More useful by far than basal area, individual tree values determined in the woods will show up in every bit of data processed information. Volume-value ratios will appear in all tree and area segregations of the CFI sample plot data. It seems likely that these value relationships in standing trees can become the most important impellent of the times toward the construction of complete logging access road systems for large forest areas in public and industrial ownership. They can give fine, factual support for intensification of the science of forest management and the art of silviculture. Because they attach a monetary measuring scale from the tree roots, in a manner of speaking, they promise to accelerate application of the most modern business methods to the control of the forest.

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CAL STOTT
Region 9



June, 1961

GEORGE N. SEMMENS TRANSFERS TO TIMBER MANAGEMENT STAFF POSITION
ON THE UPPER MICHIGAN NATIONAL FOREST, ESCANABA, MICHIGAN

George Semmens handles his last data processing job this month in the Division of State and Private Forestry, Milwaukee, Wisconsin. Soon he will be busy on completely different activities, working out of his new official headquarters in Escanaba, Michigan. George will be missed in Milwaukee where he made many friends, and contributed many original ideas to the work of inventory controls for industrial and State use.

RICHARD M. SMITH REPLACES GEORGE SEMMENS TO WORK WITH STOTT IN MILWAUKEE

Dick Smith will now take over the work of George Semmens in Milwaukee, Wisconsin. Among Smith's first duties will be a thorough study of data processing methods in which the Division has become so deeply involved in the past decade. Coincident with the study and application of machine methods will be a period of field training on going CFI cases in the Region. Dick not only brings with him to his new assignment a serious interest in the heavy schedule of projects ahead, but he hopes in time to be able to contribute worthwhile work and services to the forest industries and the States in Region 9. His training and experience have fitted him well to engage in the many and varied activities in store for him, and to ultimately take over full responsibility for the work upon the retirement of Cal Stott.

LOG AND TREE GRADING FOR WOOD QUALITY
PART IV

Tables of Log Grade Recovery

A sample tabulation, and graphic picture showing the percentage of net Scribner log scale volume by log and tree grade and DBH class, is presented with this issue. The species is sugar maple, and 1127 logs and over 400 trees form the basis for the table. Given for minimum log diameters corresponding to Forest Products Laboratory grading rules of current issue, these values and correlations are such as we would expect to find in northern hardwood areas of old growth timber. Tables and graphs for a few other hardwood species will appear in future newsletters.

The basic information for these data was obtained 22 years ago in a mill scale study made at Trout Creek, Michigan. Cooperators included the Von Platen-Fox Lumber Company, the Division of State and Private Forestry in Region 9, two qualified industrial lumber graders, and U. S. Forest Service scaler Joseph Donery. All records were IBM compiled at the Forest Products Laboratory in Madison, Wisconsin. There were five major purposes for the study:

1. To provide information of value in preparing stand structure analyses for hardwood sawlog timber stands.
2. To build a better guide for selective cutting and timber marking in northern hardwoods.
3. To aid in the appraisal of stumpage for purchase or sale.
4. To develop preliminary guides for the quality grading of standing hardwood trees.
5. To contribute to the development of hardwood log grading rules for the Northern Lake States.

Today many detailed studies are in progress in the field of log and tree grading for quality. We hope eventually to have much better grade recovery information for northern and central hardwood species. When this material becomes available its use will be recommended, for the competitive climate of the times in the quality log market encourages the application of such knowledge in the science of business. The forester, too, is involved, for it is becoming increasingly important in inventory controls, to determine tree volume and value in conjunction.

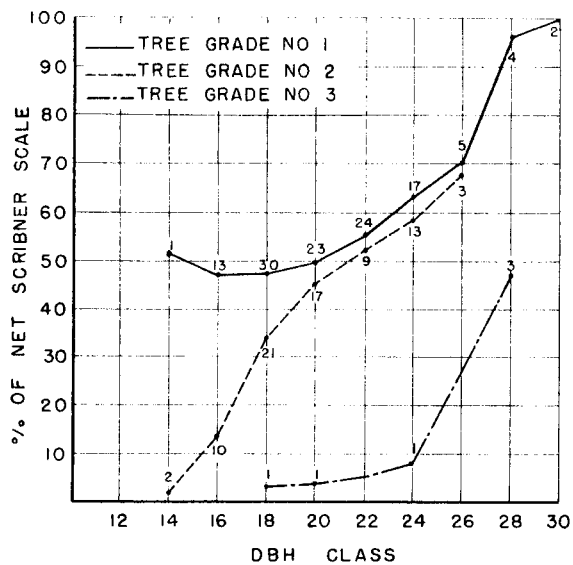
Until new information becomes available, it is the plan to experimentally use Trout Creek Mill scale study material for tree quality compilations in northern hardwood stands inventoried by the Region's standard industrial CFI method.

CAL STOTT
Forester

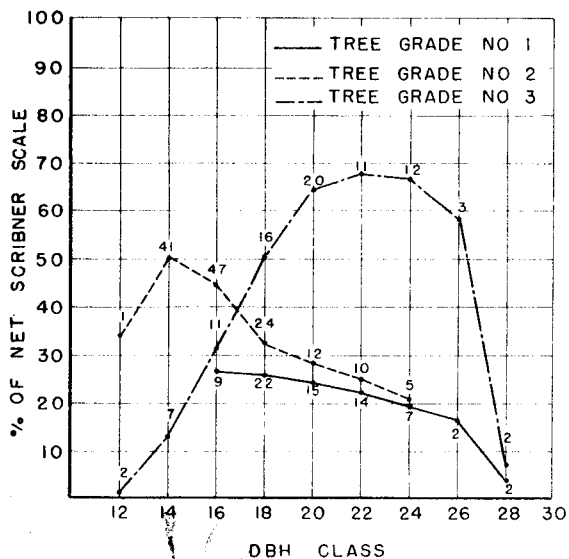
PERCENT OF NET SCRIBNER LOG SCALE
BY DBH CLASS

FIGURES REPRESENT NUMBER OF LOGS

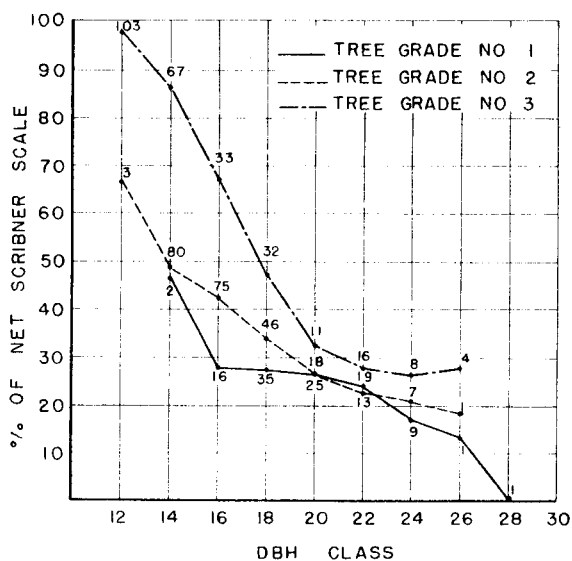
SUGAR MAPLE
LOG GRADE NO 1



LOG GRADE NO 2



LOG GRADE NO 3



June, 1961

LOG GRADE RECOVERY BY TREE QUALITY GRADE
IN PERCENT OF
SCRIBNER NET LOG SCALE VOLUME
SUGAR MAPLE

DBH Class	TREE GRADE NO. 1			TREE GRADE NO. 2			TREE GRADE NO. 3			ALL TREE GRADES			DBH Class
	Log Grade 1	Log Grade 2	Log Grade 3	Log Grade 1	Log Grade 2	Log Grade 3	Log Grade 1	Log Grade 2	Log Grade 3	Log Grade 1	Log Grade 2	Log Grade 3	
	% of Net Log Scale			% of Net Log Scale			% of Net Log Scale			% of Net Log Scale			
12	0	0	0	0	33.3	66.7	0	1.9	98.1	0	3.1	96.9	12
14	51.9	1.0	47.1	1.7	50.1	48.2	0.6	13.1	86.3	2.0	38.1	59.9	14
16	46.6	26.3	27.1	13.4	44.6	42.0	1.8	31.8	66.4	18.9	37.6	43.5	16
18	46.8	25.8	27.4	34.7	32.0	33.3	2.7	50.6	46.7	42.8	28.3	28.9	18
20	49.5	24.2	26.3	45.3	28.2	26.5	3.4	64.6	32.0	39.5	33.2	27.3	20
22	54.4	22.1	23.5	52.2	25.0	22.8	4.8	67.5	27.7	43.5	32.0	24.5	22
24	63.5	19.4	17.1	58.6	20.6	20.8	7.4	66.3	26.3	50.5	29.6	19.9	24
26 & up	70.3	16.2	13.5	68.0	13.4	18.6	13.5	58.7	27.8	52.8	27.8	19.4	26 & up
Ave.	53.2	23.7	23.1	31.2	34.5	34.3	3.1	41.6	55.3	33.1	32.0	34.9	Ave.
No. of Logs	113	69	107	75	140	243	2	83	274	190	292	624	No. of Logs
Net Scale	16,115	7,165	6,984	9,610	10,659	10,589	580	7,650	10,190	26,305	25,474	27,763	Net Scale

NOTE: These values have been prepared for use in data processing tree quality grade information taken in C.F.I. cases. Applicable in the northern hardwood sawlog stands of Michigan and Wisconsin, the basic information comes from the Trout Creek Mill Scale Study of 1940.

The grades of logs in these old data have been changed to harmonize with top diameters of logs in the current log grading standards. The values in this table give the percent of net Scribner log scale in each DBH class, for each tree quality grade.

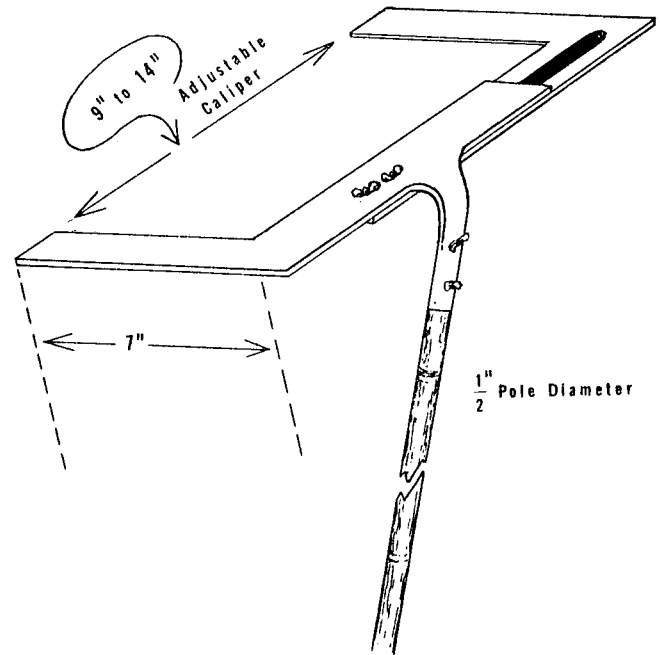
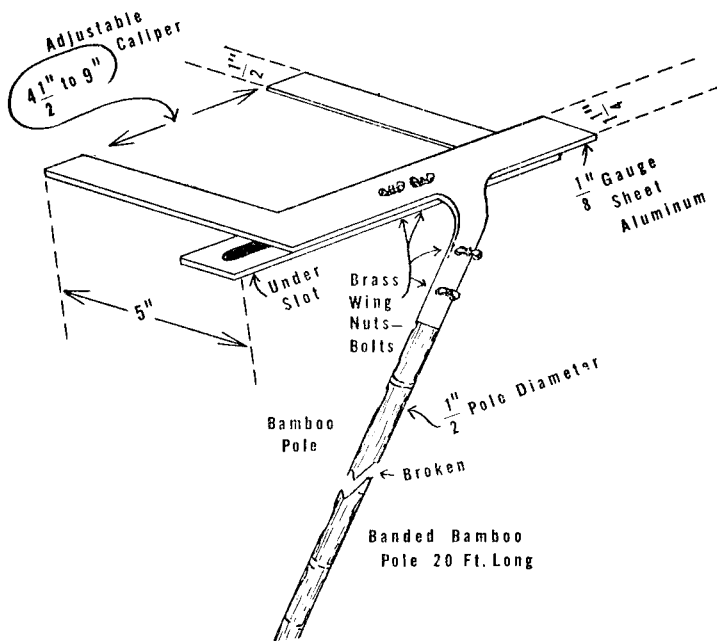
CAL STOTT
Forester
U. S. Forest Service
Region 9

MEASURING POLE AND ADJUSTABLE CALIPER
FOR
DETERMINING THE USABLE LENGTH AND TOP DIAMETER OF PULPWOOD AND SAWLOG TREES

June 1961

MEASURING MINIMUM TOP DIAMETERS AT
THE POINT OF MAXIMUM USABLE LENGTH
PULPWOOD AND SAWLOG TREES

MEASURING MINIMUM TOP DIAMETERS AT
THE END OF THE FIRST FACTORY LOG
SAWLOG TREES ONLY



USE OF THE ADJUSTABLE CALIPER AND POLE
FOR TOTAL USABLE LENGTHS

This sketch, in perspective, represents an adjustable caliper and pole for CFI cruisers of pulpwood and sawlog timber. The instrument is used to measure the usable lengths and minimum top diameters of trees, outside the bark. It is especially adapted to use with fixed radius, permanent inventory plots where many trees are measured at each station. Timber cruisers in CFI, where personal accuracy standards are high, will find this tool useful and convenient.

Constructed of 1/8 inch aluminum sheeting, and graduated in 1/2 inches on the sliding scale, the caliper adds little to the weight of the pole. The caliper has a diameter range of 4-1/2 to 9 inches, and is bolted and taped to the small end of a 20-foot fishing pole. Strange as it may seem to the uninitiated, a limber, cheap, one-piece bamboo pole is far superior to any form of stiff, jointed or telescopic contrivance.

Not only is the caliper a measuring gauge, but it is also a hook to hang over the limbs of very tall trees, and a hand-hold for snaking the pole through the woods to the plot stations. With this caliper and pole it is actually possible to measure the usable length and top diameter of two-thirds to three-fourths of all the trees in the woods in Region 9, and possibly in other small timber regions.

USE OF THE ADJUSTABLE CALIPER AND POLE
FOR LOG DIAMETERS IN THE STANDING TREE

This sketch, in perspective, represents an adjustable caliper on a 12-foot pole. The instrument is used for measuring the outside bark diameter at the top of the butt log in standing trees.

Constructed of 1/8 inch aluminum sheeting, and graduated in one-inch intervals on the sliding scale, the caliper has a diameter range of 9 to 14 inches. It is thus suitable for measuring minimum diameters of factory log grades Nos. 2 and 3, and grade No. 1 with 7-foot clear cuttings.

The caliper is a great help to the cruiser interested in grading sawlog trees for quality, and may be used on special projects to this end. The diameter range covered by the caliper includes those tree sizes which are often most difficult to accurately estimate in top diameter. Placed on the end of a longer pole, this caliper is also helpful in gauging the top diameters of every log in the tree where it is the practice to estimate the quality of sawlog trees in this manner, rather than from the butt log alone.